AMENDMENTS TO THE CLAIMS

Please amend claim 1, such that the status of the claims is as follows:

1. (Currently amended) A method of supporting a product wafer for etching of microelectromechanical system (MEMS) devices through a first side of the product wafer utilizing a patterned handle wafer, the method comprising:

forming a first structure pattern on a first side of the handle wafer;

forming a second structure pattern on a second side of the product wafer;

patterning a plurality of MEMS devices on the first side of the product wafer; and

positioning the product wafer on the handle wafer with the second side of the product wafer facing the first side of the handle wafer wherein the first structure pattern of the handle wafer mates with the second structure pattern of the product wafer in a mechanical connection that limits lateral movement between the product wafer and the handle wafer; and

etching the plurality of MEMS devices patterned on the product wafer using a through-etching process such that the MEMS devices are released from the product wafer.

2. (Original) The method of claim 1, further comprising:

coating the first side of the handle wafer with an insulating layer after formation of the first structure pattern on the handle wafer.

3. (Original) The method of claim 1, further comprising:

forming thermal contact structures on the first side of the handle wafer which provide a thermally conductive cooling path from the handle wafer to the product wafer.

4. (Original) The method of claim 3, wherein a number of thermal contact structures is selected to provide a predetermined thermal contact area between the handle wafer and the product wafer.

5. (Original) The method of claim 1, wherein the MEMS devices are disc drive microactuators.

6. (Original) A method of forming MEMS devices on a first side of a product wafer utilizing a handle wafer for supporting the product wafer, the method comprising:

forming a first structure pattern on a first side of the handle wafer;

forming a second structure pattern on a second side of the product wafer;

patterning a plurality of MEMS devices on the first side of the product wafer;

positioning the product wafer on the handle wafer with the second side of the product wafer facing the first side of the handle wafer wherein the first structure pattern of the handle wafer mates with the second structure pattern of the product wafer in a mechanical connection that limits lateral movement between the product wafer and the handle wafer;

placing the mated product wafer and handle wafer in a plasma etch chamber on a cathode such that a second side of the handle wafer contacts the cathode;

etching the plurality of MEMS devices patterned on the product wafer using a through-etching process; and

removing the mated product wafer and handle wafer from the plasma etch chamber such that the product wafer, handle wafer, and released MEMS devices are removed together.

7. (Original) The method of claim 6, wherein etching the MEMS devices on the product wafer releases the MEMS devices from the product wafer onto the first side of the handle wafer.

8. (Original) The method of claim 6, further comprising:
coating the first side of the handle wafer with an insulating layer after formation of the first structure pattern on the handle wafer.

9. (Original) The method of claim 6, further comprising:
forming thermal contact structures on the first side of the handle wafer which provide a direct thermally conductive cooling path from the handle wafer to the product wafer.

10. (Original) The method of claim 9, wherein a number of thermal contact structures is selected to provide a predetermined thermal contact area between the handle wafer and the product wafer.

11. (Original) The method of claim 6, wherein the MEMS devices are disc drive microactuators.

12. (Original) An apparatus from which at least one MEMS device is formed by through-wafer plasma etching, the apparatus comprising:
a handle wafer having a first side with a first structure pattern;
a product wafer having a first side with a MEMS device feature pattern and a second side with a second structure pattern; and
wherein the product wafer and the handle wafer are positioned with the second side of the product wafer facing the first side of the handle wafer, the first structure pattern of the handle wafer mating with the second structure pattern of the product wafer in a mechanical connection that limits lateral movement between the product wafer and the handle wafer.

13. (Original) The apparatus of claim 12, further including:
an insulating layer on the first side of the handle wafer.

14. (Original) The apparatus of claim 12, further including:

a direct thermally conductive cooling path from the handle wafer to the product wafer that is provided by thermal contact structures on the first side of the handle wafer.

15. (Original) The apparatus of claim 14, wherein a number of thermal contact structures is selected to provide a predetermined thermal contact area between the handle wafer and the product wafer.

16. (Original) The apparatus of claim 11, wherein at least one MEMS device is a disc drive microactuator.